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Professional Unity.*

HOW THE "NATIONAL" HELPS.

By Dr. O. CHARNOCK BRADLEY, Edinburgh.

While individuality and intellectual freedom are necessary on the scientific side of a profession, unity is imperative on the ethical and political side. While a member of a profession should not be hampered overmuch by tradition and custom and should not be without the moral courage to break with time-honoured views of practice with which he cannot agree, he must not forget that in political matters he owes the duty of loyalty to the profession of which he is a unit. Stated briefly, it is essential that in the members of a profession there should be freedom of thought, with unity of purpose.

The need for unity was recognised in 1844, when a handful of far-seeing and enthusiastic men met together in a tavern in London and determined to band into a profession the various scattered and often quite isolated practitioners of veterinary surgery in this country. This meeting and its results notwithstanding, it does not seem certain that we have as yet, quite attained perfection of unity. It is not unusual, for example, to hear that a certain practice is desirable for the reason that there is no *opposition* within so-and-so many miles, and it is not an unknown circumstance for a practitioner to speak of his *opponent*. Bickerings still take place, and, very unfortunately, are sometimes revealed to the lay reader of the public press.

Some lack of perfect unity obviously remains, and it is doubtless a counsel of perfection to say that in the future absolute unity should be attained. But this is not to say that its attainment is not to be attempted; and every factor towards possible attainment must be welcomed and cherished.

While in the early days in the history of the veterinary profession there was only one body whose duty it was to foster professional unity, now there are two—the Royal College of Veterinary Surgeons, as represented by its Council, and the National Veterinary Medical Association. Concerning the former, nothing need be said here, except that it is, and must remain, the supreme governing body of the profession. The National Association has a function that is different and a sphere of action that is twofold. From its very inception it has always been a potential factor for unity, since its earliest constitution provided for an annual reunion of its members, and its meetings were directed as much towards the social as the scientific. In its present and reorganised form, the Association has still to encourage the accumulation and diffusion of knowledge, and still affords opportunities for social intercourse; but now it also aims at the preservation of the rights and privileges of its members.

Although the machinery of the reorganised National Association is now in working order and is producing results that it is believed will benefit the entire profession, it almost seems as though its method of functioning needs to be more widely known and understood. Apparently even members of the Association are not perfectly clear on this matter, and for this reason a short, and not necessarily complete, description of the Association as it now exists may not be out of place.

The parts of the Association are *Divisions*, *Branches*, a representative *Council*, and a *Provisional Committee*—the last-named being created afresh each year, for the purpose of making the arrangements necessary for the Annual General Meeting and dissolving automatically when the business of the meeting has been concluded.

Divisions—which are really the various local veterinary societies—are the smallest collections of members, and enjoy the advantage that their meetings are held at such places as are within reasonable reach of the homes of the members. It is through the Divisions that every individual member of the National Association has an opportunity of sharing in the general work of the Association. Insofar as the political work of the Association is concerned, it is the duty of each Division to discuss (1) matters of local application, and (2) matters affecting the Association as a whole. Discussion may either (1) originate with the Division, or (2) arise out of some specific question submitted to the Division by the Branch of which it forms a part, or by the general Council of the Association. The views and opinions of, or resolutions framed by, the Divisions may be sent either direct to the Council or to the Branch.

Branches are groups of Divisions and have the same general duties as Divisions, but obviously the local questions with which they deal will usually have a wider geographical application. Seeing that the membership of a Branch is the combined membership of its constituent Divisions, it follows that the opinion of a Branch should have much more weight than that of a single Division.

It is clearly necessary that meetings of Branches should be held at fairly frequent intervals, and it may

* Presented at a meeting of the North of Scotland Division of the N.V.M.A., held at Aberdeen on October 16th, 1921.

be remarked that there is no reason why such meetings should deal solely with matters of professional politics. They may be partly occupied by the reading of papers, demonstrations and operations, and the like. Indeed it is very desirable that they should do so; and I would suggest that the various Divisions constituting a Branch should combine their ordinary periodic meetings once in a while and thus offer an inducement to all the members of the Branch to gather together.

It should be remembered that the Council of a Branch may, on the one hand, ask for the expression of opinion from its Divisions, and on the other, through its President and Secretary, express the views of the Branch in the general Council of the Association.

The *Council of the Association*, containing as it does the Secretary and representatives of each Division and the President and Secretary of each Branch, can claim to be truly representative of the Association as a whole. Beside carrying on the general business of the Association, the Council has to receive and consider opinions and resolutions submitted by the Divisions and Branches. The Council, moreover, may ask the Divisions and Branches for their views on specific questions, and can thus obtain, in a manner that is otherwise impossible, the opinion of the whole Association.

When the Council have satisfied themselves that the opinion of the majority has been obtained, they are then in a position to take such action as may be deemed advisable or desirable.

From the above it should be evident that for a single Division, or even a Branch to take isolated action is not the best method of procedure, and indeed is generally undesirable. The obviously better way is, through the Council, to obtain the combined weight of all parts of the Association.

The phenomenally rapid growth of the membership of the Association during the past eighteen months has been most gratifying; but we ought not to rest satisfied until not more than a very small and entirely negligible minority of the profession is outside. That the Association is a powerful factor for unity now is beyond doubt; then its power for good will be increased a hundredfold.

Universities and the R.C.V.S.

London Senate Petition.

Under the heading "A Monopoly in Veterinary Practice" the following appeared in last Sunday's *Observer* (the R.C.V.S. being erroneously referred to as the Royal Veterinary College):—

"The Royal Veterinary College holds the somewhat anomalous position of being at present the only body in England entitled to grant a licence for the practice of veterinary surgery. A natural grievance is felt by University graduates in Veterinary Science. The analogy would be if the Royal College of Surgeons and Physicians held a like monopoly for practice on human beings. London University has seized a present opportunity to protest. The Royal Veterinary College is applying for a new charter, and the Senate of London University is sending a Humble Petition to the King's Most Excellent Majesty in Council, opposing the application unless provision is made by which the Universities of the United Kingdom are enabled to confer a similar licence on their own graduates in Veterinary Science. Courses in this science were started in London University in 1906, since when degrees have been conferred. The monopoly exercised by the Royal College dates from 1844. There is now a chance of destroying an anachronism. It is hard to see how the University's plea can be ignored: 'Your Petitioners humbly submit that if examinations of Universities have been recognised as a proper qualification for those who are to administer to the sicknesses of the human race, similar examinations should equally qualify a person to administer to the sicknesses of animals.'"

Liverpool Call for a Commission.

The *Times* of Monday contained the following letter from Dr. Adami:—

Sir,—If only as showing the influence exerted by correspondence in your columns, it deserves note that there is now before the Privy Council a petition from the Royal College of Veterinary Surgeons for a supplemental charter bearing upon the point at issue between Sir John McFadyean and myself in your pages, in June of last year. In this petition the Royal College fully confirms my contention; it admits the inadequacy of its examinations as at present conducted, and asks for powers to appoint internal examiners. These internal examiners, members of the staffs of the institutions in which the candidates have been taught, are, it is true, to be given limited powers and no remuneration. Yet this is distinctly a move forward, and the Royal College is, to this extent, to be congratulated.

Nevertheless, there remain many defects in the charter, curriculum, and examinations governing admission into the ranks of the veterinary profession, and these defects must be remedied. With the great development of secondary education, such that any reasonably intelligent boy can reach the university matriculation standard at the age of 16, and those of commonplace capacity certainly by the age of 17, that standard, and none lower, should be made obligatory for entrance as a student into all self-respecting professions. In place of oral there should be practical examinations in all scientific and technical subjects of the curriculum. With the present dearth of expert veterinarians trained to undertake investigations into animal diseases, there should be encouragement and not positive hindrance placed in the way of those students who desire a more thorough grounding in the basal sciences. Under existing conditions those students who enter a university and take the fuller training in the preliminary medical sciences, and more particularly in physiology, pathology, and bacteriology, are given no consideration. Their university examinations are not recognized: at each stage of their course they are forced to

duplicate their examinations, to break into their university course by presenting themselves for the examinations of the Royal College. This is a wholly reactionary state of affairs. In this generation one profession after another has placed itself under a charter so that only those who have conformed to the regulations of the chartered body are recognized as legally constituted members of that profession. All thus enter the particular profession by the one portal—namely, recognition and registration by the chartered authority. And one after the other the charters of the registering institution of the medical profession, the dental profession, mechanical engineers, civil engineers, electrical engineers, and architects, contain clauses accepting university examinations and degrees as registrable and exempting, under conditions which vary in the different professions, from the corresponding examinations and diplomas of the different chartered institutions. At this moment the surveyors are seeking for like powers. Surely the time is ripe to abolish this insensate duplication of examinations in the case of the veterinary profession.

The time, indeed, is ripe, not for a succession of patches and additions to a garment which has long been outgrown, but for obtaining one that is new and that fits the needs of to-day: is ripe for a Commission to inquire into the whole matter of veterinary education, and to draft a new and adequate charter.—Yours very truly, J. GEORGE ADAMI.

University of Liverpool.

THE "TIMES" HAS ITS SAY.

Dr. Adami's letter produced editorial comment on the succeeding day, as follows:—

Eighteen months ago we called attention to the relatively low esteem in which the veterinary profession is held in this country, and to the associated circumstance that although Great Britain and the Empire could absorb a large number of skilled practitioners, the annual output of veterinarians is lower in proportion to our population than in most civilized countries. We attributed this unfortunate state of affairs partly to the fashion in which the Royal College of Veterinary Surgeons exercises its legal monopoly of conferring the right to practise. An animated correspondence followed. According to a letter from Dr. Adami, of the University of Liverpool, which we published yesterday, the movement thus started has had an important consequence. The Royal College has presented a petition to the Privy Council asking for a supplemental charter. If this be granted, teachers at the four veterinary colleges would no longer be excluded from taking a share in the conduct of the examinations. It would be a step in advance; for, although external examiners may be necessary in maintaining a standard, it is now generally recognized in other professions that if teaching is to be free and intelligent, the teachers must have a large share in setting the examination papers and in judging the performance of candidates. But there are two larger questions involved, and, according to Dr. Adami, not provided for in the existing or the proposed new charter. The first is the standard of the entrance examinations, the second the relation of veterinary colleges to universities. Clearly, if veterinary medicine is to be regarded as a scientific profession, those who propose to qualify should have a general education at least such as would fit them to pass the matriculation examinations of the universities. To arrange otherwise is to accept deliberately an inferior social and scientific status for the profession. Clearly also the Royal College should accept, in place of its own examinations in the basal sciences, university certificates of proficiency in such subjects as physiology, pathology, and bacteriology. It is not easy to understand why the Royal College of Veterinary Surgeons should be a more jealous guardian of the door to practice than the Royal Colleges of Physicians and Surgeons. We trust that the Privy Council will await a full inquiry into the present position of veterinary practice in this country, by Royal Commission or otherwise, before sanctioning a small improvement which may postpone larger and more necessary changes.

Liverpool Virus.

TRACKING DOWN THE UNREGISTERED.

Dr. Adami, the Vice-Chancellor of Liverpool University, has addressed the following letter to veterinary practitioners:—

Dear Sir,—I am desirous of ascertaining the number of unregistered practitioners in veterinary medicine and surgery in the country, as well as the number of men going about as castrators, and I should esteem it a favour if you could give me the names and addresses of such men in your neighbourhood. I understand that the number is rapidly increasing, and being deeply interested in the future of the profession, am considering some scheme by which this increase may be stopped.

As this matter is somewhat urgent, I shall be glad if you will fill in the enclosed form and return it to me in the stamped addressed envelope, which I enclose, at your earliest convenience.

Thanking you in anticipation, I remain, yours faithfully, J. GEORGE ADAMI.

October, 1921.

Swine Fever Serum.—Dr. Murray asked in the House on October 31st, whether a quantity of serum urgently required for the treatment of swine fever arrived in England on September 13th, but owing to the effect of the Reparations Act was not obtainable until October 21st, and whether consequently serious loss had occurred. Sir Robert Horne was unaware of the alleged occurrence, but promised to make further inquiries.

The Ministry of Agriculture and Fisheries gives notice that a Show of thoroughbred stallions will be held, in conjunction with the Hunters' Improvement and National Light Horse Breeding Society, at the Royal Agricultural Hall, Islington, on 28th February, 1st and 2nd March, 1922.

The Veterinary Record.

26th November, 1921.

MEDICAL POST-GRADUATE STUDY.

The report of the special committee appointed by the Minister of Health to investigate the needs of medical practitioners and other graduates for further education in medicine in London is of considerable interest, illustrating as it does the means by which the demand for such advanced study is best likely to be met. After a brief review of the provision which has hitherto been made, the committee frankly state that "the undergraduate course of training alone does not at present equip men and women to practise their profession in a fully efficient way."

Although the committee would be "the last to allow that British doctors are not equipped as well as any in the world," they acknowledge the fact that "even a British licence to practise is not always a reliable guarantee of complete competence," inasmuch as it is impossible to crowd into a space of five or six years all the medical science required by the practitioner of to-day.

The committee realises that further general training of the doctor immediately upon graduation would not meet the needs of a large variety of classes nor of a certain section of young graduates, and they therefore consider the requirements of the following categories :—

(*a*) Graduates who have recently qualified.
(*b*) General practitioners of some years' standing, who require general courses in medicine and surgery.
(*c*) General practitioners who seek instruction in special subjects.
(*d*) Graduates from home and abroad who need instruction immediately after qualification, with a view to a higher degree or diploma.
(*e*) Officers in the services, Navy, Army, Indian and Colonial.
(*f*) Graduates who require facilities for extended medical research.
(*g*) Graduates from abroad falling into categories (*b*), (*c*) and (*f*).

As a result of the careful consideration of the requirements of the various types of graduates, of the existing facilities for post-graduate work, and of the use which is and might be made of such facilities, the committee finally summarises the recommendations as follows :—

(1) A school attached to a Hospital, centrally situated in London, should be devoted solely to post-graduate medical education.
(2) The School should be a school of the University of London, and receive substantial financial assistance from the Treasury, through the University Grants Committee.
(3) In addition to the courses provided at the Central School for full time instruction of general practitioners, and at existing post-graduate colleges and schools, further facilities for post-graduate study should be made available at non-teaching hospitals and in Poor Law Infirmaries.
(4) It is desirable that increased use should be made of cottage hospitals, in which all general practitioners of the neighbourhood should have the right, if they so desire, to treat their patients.
(5) A much larger number of resident appointments and clinical assistantships should be created in hospitals and Poor Law Infirmaries.
(6) A Central Office should be established to co-ordinate and develop the work of post-graduate education in London. In the administrative building should be provided, not only offices, but the accommodation necessary for social purposes.
(7) An Institute of State Medicine should be established by the University of London, in which instruction should be given in Public Health, Forensic Medicine, Industrial Medicine, and in medical ethics and economics.

A cursory perusal of the report may fail to convey a correct impression of the remarkable similarity which exists between the requirements and suggested methods of meeting those requirements on the part of the medical profession and similar reforms urgently required by ourselves.

The similarity is remarkable inasmuch as, despite the monetary facilities which the sister profession has always possessed, the two professions stand, at the moment, on much the same footing, in so far as post-graduate education is concerned.

At first sight it might appear that recommendations such as those set out above would be impossible of attainment by ourselves. On careful consideration, however, it will be admitted that there are already available both premises and staffs, which, provided that the necessary monies to finance such a scheme are forthcoming, should be in a position to give effect to similar recommendations modified to meet our special requirements.

In the near future such questions as these will receive consideration at the hands of our governing body. Meanwhile members of the profession should endeavour to decide what is actually necessary to meet the demands of those who require facilities for post-graduate study and by what means these facilities may most readily be obtained. Well reasoned suggestions will be of considerable help to the Council when these matters come up for consideration.

General Articles.

Bovine Piroplasmosis.

By Capt. Hugh Fraser (Tavistock).

(*Presented to the Western Counties V.M.A.*)

Mr. Chairman and Gentlemen,—In presenting you this short paper, I have endeavoured as far as possible to give you my own personal experience of this disease in cattle.

Bovine piroplasmosis—popularly called "red-water"—has been known in the Tavistock district for very many years, occurring in cattle of all ages, from three months upwards, and of every condition.

Etiology.—The disease is caused by the presence in the red blood corpuscles of a minute animal parasite—the *Piroplasma bigeminum*. These parasites multiply in the red blood corpuscles and cause their destruction, thereby liberating hæmoglobin, which is excreted by the urinary tract, giving rise to the red colouration of the urine.

Mode of infection is by means of a carrier, a tick. The tick usually concerned in transmitting the disease is the *Ixodes ricinus*. But it has been demonstrated by Stockman that another tick, the *Hæmophysalis punctata*, may act as a carrier. The accepted theory is that the young of the tick, which has fed on an infected animal, conveys the disease to a healthy one, whilst the life circle of the tick is said to be about 19 weeks. One feature in this respect may be noted, that on some farms the severest outbreaks usually occur at a certain period of the year, either early summer or autumn. The disease in Tavistock district is most severe in the latter part of May and June, dies down, to recommence again towards the end of August and September. Last year cases occurred all through the winter, with perhaps the exception of December and January; probably due to the very mild winter experienced. Moist warm weather favours the development of ticks, and under these conditions grass is usually abundant, affording them good protection.

This year about the beginning of June, outbreaks were very severe. Since the onset of drought cases were not so numerous, whilst last year, being rather a wet season, I think the disease was more prevalent.

The ticks, or indications of their presence, can invariably be found on a sick animal, on the inside fore-arm or udder, or inside of the thighs, and, occasionally, high up on the flank. The period of incubation is said to be seven to fourteen days. Cattle coming from certain districts outside the Tavistock area are more liable to attack—as, for instance, quite lately, an outbreak occurred amongst twenty cattle, when three animals were affected, and all three were purchased at our market. Sudden changes in temperature—warm to cold weather—favour development of the disease, by lowering the natural resistance of the animal.

Duration.—Disease may pass off unnoticed, or the animal may continue excreting discoloured urine up to five days or even a week. The majority of cases seldom last beyond the third day.

Symptoms.

Colour of urine, of course, most diagnostic, but very often cannot be detected amongst cattle grazing, unless one's suspicions be aroused by other appearances.

In cattle grazing on red-water land careful and long observation must be given by the attendant on his rounds, and animals seen for preference at a time when likely to get up. The most noticeable symptom is the motion of the bowels, which, I believe, is present at the onset in all cases. This is a spurious diarrhœa, when the liquid fæces are forced from the rectum in a small stream, for several feet (piping), like water from the nozzle of an enema pump. This condition is probably due to congestion of the hæmorrhoidal veins, and there is a wrinkled, puckered appearance around the anus. Any fæces around the orifice, if fresh, can be seen to be distinctly bile-stained. Apart from the urinary and bowel appearance, the animal may look normal, feed, and show no symptoms of illness, when the disease may pass off. This probably occurs only in animals which have acquired some immunity from previous attacks. In cows the milk is often blood tinged—a bad symptom.

If disease progresses or has been present some little time before observed, the animal looks dull, ears droop, coat stares, and eyes are more or less sunken. (Lachrymation is by no means a common symptom, it is, in fact, uncommon.) Bowel motions, semi-fluid, frequent and small evacuations. Animal may look hollow or full, the latter being the more unfavourable appearance. Respirations are hurried and the animal shows exhaustion on the least exertion, stopping after walking a few yards. High temperature (105-106°), mucous membranes of eye and mouth appear pallid, pulse quick and wiry, and gives one the impression of being peculiar to red-water. Heart palpitates loudly, and as the disease progresses, its action may be heard several yards away. Appetite usually continues good for one to three days, according to severity of disease, and in vigorous animals may remain good all through. When the destruction of red blood corpuscles continues severe, the patient becomes exhausted, lies about continually and refuses to take any food. Temperature sub-normal (bad symptom), recovery rarely taking place, especially if the urine is dark. Severe constipation, due to anæmia of the bowel, sets in, and animal keeps straining to pass fæces. At last, animal goes off its legs, refuses to rise, the heart beats very loudly; the creature groans, shows signs of pain in bowels by turning head back to flank, or stretches its neck out and rubs chin on the ground.

There is restlessness of hind legs, and twitching, convulsive movements of head may be observed. Death supervenes from heart failure due to loss of blood. Once the urine becomes clear, the condition of the animal improves, and the length of time to recuperate depends on the severity and duration of the disease. But in most cases one has constipation

to contend with in a lesser or greater degree. Death may even occur two or three days after the urine becomes normal. The chief causes of death are heart failure, gastric enteritis from excessive irritant purges, and traumatic pneumonia.

In a few cases animals seem to show great nervous excitability, and on being approached or cornered, attack one.

These must be looked upon as severe cases, and are best left to themselves.

One may be called in to an animal showing symptoms of great weakness and constipation. Urine normal, and on examination the visible mucous membranes are bleached, and the heart-beats characteristic of red-water.

Animals affected with tuberculosis are very bad patients, and if the lungs are at all affected, invariably die. Old, heavy milking cows are also very bad subjects.

Appearance of the Urine.—In the early stages the urine may just be reddish-tinged or it may be dark coloured, resembling port wine. Whether the urine always proceeds from the lighter to the darker stage, or in many cases is dark from the onset, is a debatable point. Probably most cases are very dark at the onset.

In one case treated this summer the urine was faintly tinged for three days, and did not respond to owner's treatment. On being called in, the mucous membranes were as bleached and symptoms as severe as if the animal had been excreting very dark urine. When the urine is shaken up in a bottle, and the froth appears reddish, one has usually a severe case to deal with. When the colour resembles that of weak coffee, drainage on the animal is not so severe, and one invariably looks for a quicker return to the normal. Once the urine begins to change, the varying stages in clarification are very interesting—port wine to coffee colour, to sherry colour, to amber colour to clear. In most cases once the urine begins to clarify it returns to normal in from twelve to twenty-four hours.

Relapses.—These are not uncommon, and may supervene before the urine has cleared and again relapse in a day or two up to a month. Rarely does one hear of an animal relapsing after six weeks. Mr. Gibbings records a cow which was affected three years following.

Treatment No. I.

Treatment is directed chiefly to maintaining the fluids in the animal's body, nourishment, and prevention of constipation. Common salt is given to induce the animal to drink. A big three-year-old steer will take one pound of salt given in two quarts of linseed gruel with two pounds of treacle. The linseed gruel is given as a demulcent and nutrient, but where nourishment is not so necessary, the treacle makes a good demulcent, dissolved in three-quarter gallon of warm water. Lard is often given in place of treacle, but, personally, I do not advise lard, on account of its nauseating properties. The only recommendation is that it is always at hand. The above drench is usually repeated every twenty-four hours, but one must be guided by the condition of the animal.

Need for careful drenching.—Always drench with a horn, one mouthful, and then stop. Take plenty of time over it, and fight the animal as little as possible. Do not hold the nose unless absolutely necessary. I do not care for giving large doses of salt, and would prefer, if animal is confined indoors, to give smaller doses (6 ozs.) oftener. If loose at pasture, one must consider the fatigue of securing animal. When called in to cases where the owner has been drenching with large doses of salt indiscriminately, one always finds they are bad cases to treat. Salt causes great depression, leads to inflammation of the bowels, and helps to produce the severe constipation so often a sequela to the disease, and may also cause the brain symptoms.

It also has a bad effect on the heart's action. Avoid driving or hurrying, especially in hot sunshine. The usual practice with cattle at grass is to leave them out, but they are better indoors. Give plenty of good water, earth to lick, and anything green to eat. They very often refuse best grass and eat hay, ivy leaves and ash leaves. If the animal will not feed, give linseed gruel and eggs and new milk. A full-grown animal will take about 3-4 gallons of gruel and milk daily, with one dozen eggs, given in four parts, not too much at one drenching. Amount given must be reduced if animal shows signs of becoming distended or nauseated. If animal is very weak when called in, avoid large doses of salt at all cost. Linseed oil and turpentine may be given, or salt in small quantities with the gruels. The bowels are regulated with linseed gruel, black treacle and the enema pump. Two pounds of treacle per day may be given to a full-sized bullock; too much treacle leads to irritation of the bowels and tympany.

At this stage so-called opening drenches must be avoided. Vegetable tonics, such as infusion of gentian and cinchona, a.a. ℥i. three times daily. Small doses of iron and nux vomica. Non-volatile stimulants may be given, and gin seems to be most beneficial. Heart stimulants should be given in very small doses, to prevent over-taxing the muscles.

In young cattle especially turpentine seems to act very well in ℥i. doses every 8 hours; but I do not advise using turpentine until disease has been in evidence forty-eight hours, as being likely to produce anorexia. It is also useful when the urine has begun to change; but process is slow.

Treatment II.: Intravenous Injection of Tartar Emetic.

I think this is the most direct form of treatment. Whilst the foregoing is devoted to building up the body resistances, this method has for its object the destruction of the piroplasm. The method was first suggested by Sir Stewart Stockman, and has been practised by Mr. Gibbings for about four years, and by myself for the third red-water season. Mr. Gibbings' and my own opinion is—that the treatment

is most successful, as the following chart will, I hope show.

5th April to 12th August.	One Injection.	Two Injections.	Three Injections.	Delayed Treatment.	Died.	Total Injections.
	47	16	3	7	2	88

Total number of cases :—73.

Of the two deaths recorded in the chart, both were injected at least twenty-four hours after the disease had been observed. One animal died rather unexpectedly, while the other was found to be affected with tuberculosis of the lungs.

Dosage.—The dose given to full-grown animals is 15 grains dissolved in 2 ozs. of sterile water, and when necessary, repeated in 18 to 24 hours.

Mr. Gibbings has, on several occasions, given 22½ grains to big South Devon cows. Personally, I would prefer to repeat the smaller injection at shorter intervals.

After injections animals often tremble, cough, breathe quickly, and show slight distress. Only once did I see any alarming sequel. I gave a first calving Guernsey cow of fair size the usual dose. She immediately showed great distress, her flanks heaved, her respirations became hurried, and I expected to see her collapse, but on being turned out into the open air she quickly revived, and the next day was better. Yearlings take about half the dose. If the animal is weak, one would better err on the safe side and give a smaller dose. I do not think there is any danger in injecting an animal, if one considers the patient's condition and size, and would only withhold injecting if there was evidence of an early death. Animals have been injected up to three times, but I cannot remember exceeding that, unless in one case. In the cases of longer duration injections may have been given at longer intervals, for some reason (urine might be considered better and animal allowed to go, or some reason more convenient to the operator). The intravenous injection seems to have a marvellous effect on the animal, even if the urine remains unaltered. The eyes come out and the animal looks altogether brighter in itself. I can recall one case in a big South Devon cow. Off feed, looking hollow, eyes sunken, and coat stary. On my visit next day, urine as bad as ever, but cow looking well, feeding, and chewing her cud. After three injections she made an excellent recovery. From this treatment, on the whole, one gets a quicker change in the urine, and in the slower cases it would seem to lessen the severity of the usual sequelæ.

In the case I mentioned earlier, where urine remained faintly tinged for four days after injection, it returned to normal within 24 hours, and the animal improved very quickly. Another similar case, in a yearling given half a dose, was better in 12 hours. Recently a cow treated by owner for three days was given two drenches, then owner became alarmed, as he considered the urine had relapsed in the 12 hours previous to consulting me. Twelve hours after injection cow was better.

A large number of cases are treated by owner repeating drenches at intervals of 24 hours for two days. On the third day advice is sought, when the animal is injected and treated according to symptoms, and, as a rule, we do not see the cases again. On the other hand, quite a number of farmers insist on the intravenous treatment as soon as disease is observed. A drover who looks after some 200 bullocks on grazing land round Tavistock, and acquainted with red-water all his life, will not be turned away without having the animal injected at the onset of disease.

The syringe used is the anti-abortion syringe, also a needle.

Method of procedure.—Animal is secured by head-rope round the horns, or tied in the shippon. An attendant grasps animal by both horns, on the other side from operator, and holds the head slightly elevated and towards himself, so that the convex curve of neck is next to operator. This curve of the neck makes the vein more prominent.

A very good way of holding the animal, when tied in a byre with low stall divisions, is for the attendant to grasp the horns over the division. A rope is placed around the neck, pulled tight, and held so by another attendant during the operation. By this means the vein is distended and prominent. Care must be taken to have the skin over neck pulled well down in the normal position. If this is not done, and, on piercing the skin with needle, should the animal move, one may find the needle a long way from the vein. To insure accuracy, it is better to have the pull on the bleeding rope, from below upwards. In inserting the needle, one should try to do so with the point downwards into the long axis of the vein. When a fine flowing stream of blood runs from the needle, the syringe is connected up and the solution gradually injected. The vein is kept distended until the solution is all injected, the syringe is disconnected, and a fine stream of blood allowed to flow so that all solution left in needle may be flushed out and not allowed to lodge in subcutaneous tissues whilst withdrawing needle. The rope is released and needle withdrawn. Massage the site of injection when finished.

In most cases animals can be injected without holding the nose ; this should be done only as a last resort. The animals stand more steadily without. Occasionally one gets an enlarged vein or, more commonly, a subcutaneous swelling of considerable size over the site of injection, due to the solution being injected into the tissues. In some cases this seems to be inexplicable, but it is usually due to the animal being restive, or by giving a sudden twitch, jerking the needle out of vein. Another cause is the imperfect cleaning of the needle after previous usage. This causes clotting of the blood blocking up the needle. To prevent this I always flush the syringe well out immediately after use and immediately prior to the injection. One should not proceed to inject unless the blood runs in a free stream from the needle, and if it does not do so at finish of operation, one may expect an enlarged neck. I have seen no untoward results from these swellings.

Preventive treatment.—Keeping cattle off the infected pastures for two years would, in all probability, stamp

out the disease. Grazing sheep along with cattle is said to lessen the outbreak, as the ticks adhere to the sheep, and sheep being immune, the number infected is lessened. In my opinion this is only due to the fact that fewer cattle can be grazed on the pasture.

Last year I had two cases in horses which resembled the disease as seen in cattle. Both occurred on red-water farms; they responded to treatment, and one which was rather severe received an intravenous injection of tartar emetic.

I would suggest the discussion be centred on:—

(1) Treatment of disease by intravenous injections of medicinal agent, transfusion of blood, or other means.

(2) Prophylactic measures:—(*a*) Eradication of ticks from infected pastures; (*b*) Destruction of ticks on animals by swim baths, or applications to the skin; (*c*) Inoculation.

Discussion.

Owing to the unavoidable absence of Capt. Fraser, Mr. G. H. Gibbings read the paper, and apologised for his non-appearance, at the same time observing that, although he was deputising for Mr. Fraser, and would reply to the discussion, he did not necessarily agree with the essayist. The paper was, needless to say, entirely Mr. Fraser's own production.

Mr. John Dunstan (Liskeard): I have given a good trial the new method of treatment by intravenous injection of tartar emetic, but am bound to say I have not had any better results than with the old saline treatment.

Mr. Penhale (Torrington): Years ago I used to get a lot of red-water, 50 or 60 cases a year, now I rarely see a case. When the tick theory was first advanced I made a careful search for ticks, and whilst I often failed to find ticks in cases suffering from red-water, I found them on healthy cattle just as often as the affected ones. I therefore hesitate to think the tick solely responsible. The intravenous method has been recommended since I used to get a lot of cases, and I have not therefore had the opportunity to give it a trial, but with the old saline treatment I used to get quite 90 per cent. recoveries. Practically all that were taken in time recovered.

Mr. F. T. Harvey (St. Columb): The paper is a very practical and good one, and it shows that some at least amongst us keep moving on, and thus we may hope some day to get out of the therapeutical quagmire in which we have been living in regard to black-water in bovines, as it occurs in this country. Some points occur to my mind. There is the danger of drenching, for I think there is more danger in drenching in red-water than in any other disease, but curiously enough it seems to be the first drench which is usually followed by disaster. I have thought that in this disease it may be better to give medicine by tube (Smith's rectum tube, for example) after the method of Lang, not, of course, using the nasal route. One can easily give cattle medicine, etc., well diluted, in this way. Then, again, the usual purgatives, etc., given by the mouth sometimes act promptly in clearing the water, but they do not destroy the organism. How do they bring about the so-called cure or clearing of the water? We must remember that the portal system plays a great part in this disease. A large amount of the hæmoglobin from the damaged corpuscles is broken up by the spleen and liver and thrown into the intestinal canal as bile pigment, and doubtless other toxic materials also find their way there, and hence we get the "pipe-stem" or projectile diarrhœa in the early stages, and the yellow fæces with their terrible stink later. If these materials are not thrown out from the canal, but accumulate there, some re-absorption must take place, and the liver will become further embarrassed, and perhaps a vicious circle established. The kidneys now become the sole channels for the escape of the effete hæmoglobin, and the animal rapidly goes down hill, for the liver has thrown up the sponge. Do not all or most of our remedies having any repute at all act chiefly by clearing or helping the portal system?

The anxiety of the owner to see the bowels well acting is founded on reason; but intestinal action should be encouraged and not obtained by the action of heroic doses of purgatives, as so often witnessed. The favourable action of sodium chloride in this disease may not be due to its merely creating thirst or mild purgation, but to its directly influencing osmotic processes generally throughout the body. Then, again, I think the forcible feeding of animals with large quantities of gruel, etc., can only be harmful when the portal system is choked, so to speak, and the tissues generally are being poisoned by the products of a degraded metabolism. The case is different of course when the stomachs, etc., are able to digest such materials; they then become valuable adjuncts to recovery.

I would like to ask Mr. Gibbings what he considers the relative proportion of cases due to the two organisms, *P. bigeminum* and *P. divergens*, in his district.

Trypan blue is said to have no effect on the latter. It would be interesting if we knew which kind of piroplasm we had to deal with in each outbreak, and note the different response to treatment, if any. In a case under observation at present, the urine is bright red; the temperature high, the appetite good, and what appears to be *P. divergens* is present in the blood in considerable numbers. In regard to subcutaneous saline infusions, it is wonderful how quickly fluid is absorbed, but I have not seen any permanent good result. Transfusion in these days should be possible using the citrate method. Citrate salts of potash or soda prevent clotting of the blood. Blood containing half per cent. remains unclotted for several days; 5 c.cm. of a 10 per cent. solution to 100 c.cm. of blood is used in human transfusion. Needles are first flushed with liquid paraffin, and this could be done in antimony injections to retard clotting within the needle. I have not tried blood transfusion in black-water. Bayliss's gum saline might be useful.

It is stated in books that the muscular tissues in the disease are found on *post mortem* to be in a moist condition. In advanced cases I have always found them dry. I disagree with the essayist when he says that there is no reduction in the volume of blood and that the change consists merely in a reduction of red corpuscles. As the disease advances there is a considerable diminution in the volume of blood in circulation, and the pressure falls; there is then a diminished outflow of urine, the brain gets little blood, and muscular tremors or jactitations become frequent, and these latter are usually of fatel import. An animal about to suffer from red-water is exposed to two dangers. The one may kill by inducing a profound anæmia, and with the other death may take place at any stage of the disease from an auto-intoxication. Many of our remedies approach the disease from the latter standpoint only, but Mr. Gibbings goes in for a frontal attack. He tries to kill or weaken the organism in the blood itself, and it is the real line of advance, and we may find substances in the future better for this purpose than tartarised antimony. The study of British red-water is an interesting problem, and one which will continue to furnish us with many therapeutic surprises and disasters. I have thought that the toxins circulating in the blood stream in red-water may profoundly affect the heart-muscle, as sometimes occurs in connection with diphtheria, and certain outbreaks of malaria in man, and thus account for some of the early deaths in piroplasmosis. I am of opinion that the organisms may remain quiescent for years in the bone marrow or other tissues, and again become active, and in this way sporadic cases are explained. Hypertonic contraction of the anal sphincter in red-water is a curious clinical feature, and its disappearance is of good omen. One should always suspect advanced red-water if the heart-sounds are easily heard by placing the ear behind and above the hip-joint, and they can always be heard on the third day of the attack. Every Dick, Tom and Harry

boasts of curing red-water, and our methods should aim at taking us beyond those of the man in the street, and I welcome the paper as an effort in this direction.

Mr. Gibbings : I should like to reply to the speakers at once or one is apt to miss certain points. Replying to Mr. Penhale and Mr. Dunston, comparing the old-fashioned method of treatment with that now adopted, all I can say is that I get from 500 to 600 cases a year, and I can vouch for it that the fatalities are not nearly so high now as they were before I adopted the intravenous method. Moreover, my clients are so satisfied with its superiority that many of them insist on its being used. I think the type varies in different districts, and even in the same district, *i.e.*, the type we get on the moorland farm differs from that on the pasture land. Ticks or their nodules can generally be found, if you look closely enough, on every affected case. Mr. Harvey seems to think the main cause of symptoms is due to toxæmiæ. I do not agree with him at all. I believe it to be almost entirely caused from the destruction of the red corpuscles. The improvement in the case is nearly always coincident with the improvement in the colour of the urine. I agree there is strong evidence that the liver is involved. I also agree there is plenty of scope for investigation with other agents than tartar emetic. I have tried two cases with trypan blue, but both died.

I have also tried subcutaneous and intravenous injections of saline infusion, but was not pleased with the results. I should like to give a further trial to transfusion, believing very good results could be obtained, but we want a more practical instrument than is at present available.

The President : I am now out of it, as I see very few cases, and the few I see come from the Tavistock district. When at Tavistock a good many years ago I used to see a lot, like Mr. Gibbings, and the old-fashioned treatment of lard and salt was very successful. When the bowels began to act we gave them plenty of eggs, milk and stimulants. The intravenous treatment had not been thought of, so I have not had any opportunity to try it.

Mr. Gibbings : I forgot to say, when replying to Mr. Harvey, that I am surprised to hear he disbelieved in giving quantities of liquid nourishment such as milk and linseed gruel. If I omitted this part of the treatment and the animal died, I should feel morally responsible.

Mr. Harvey : You misunderstood me. I only meant when the animal was sick, and the bowels were not acting.

Mr. Townson : I am a great believer in the saline treatment, but, unfortunately, I am generally called too late, the owner having tried it first. Some little while ago I was called to a case to which the owner had given pounds of salts ; the animal was unconscious. I injected adrenalin chloride subcutaneously, and repeated the dose in 12 hours. In 18 hours the animal was much better and made a good recovery, but was totally blind for some time. She never purged in spite of all the salts the owner had given her. I have also given 2 ounce doses of alum with a fair amount of success.

Mr. Gibbings : When one claims to have been successful with alum and others with purgatives, it looks as if the administration of medicine was very much of a farce.

Major Ascott : I so rarely see a case of red-water that I am afraid I can add very little to the discussion. I haven't seen a case for many years. One remark of the essayist or of Mr. Gibbings, I am not sure which, rather surprised me, and that was that the sole idea, or at any rate the main one, in giving common salt is to induce thirst. Seeing the action salt has on blood in hæmorrhage and blood diseases, I should think it has some beneficial action other than that of inducing thirst. I was also struck with another statement, and that was the one where a cow in good condition was allowed, with the consent of Mr. Gibbings, to be slaughtered for food. I disagree entirely with giving any such consent, not only in this disease but in other diseases with typhoid symptoms. I have got myself into bad odour more than once lately with clients for refusing to be party to some cases with hæmorrhagic symptoms, such as coccidiosis (of which I get quite a number of cases) being slaughtered for food, and I should like to ask the opinion of the meeting on this point.

Mr. Gibbings : I do not think red-water and hæmorrhage cases can be compared fairly, as there is practically no diminution in the volume of the blood, only in corpuscular elements. I attach the greatest value to the action of salines on the mucous membranes of the pharynx in inducing thirst. With regard to ethics of advising slaughter in the case of animals in good condition : it is a very difficult question, and I have been very worried on many occasions as to if it was right or not in the early stages. I do not object if no fever is present and the cattle are in prime condition, for I understand the parasites are present in the blood for some months after an attack. Would you prevent slaughter during this time ?

Mr. Smythe : I can support Mr. Townson as to the value of adrenalin chloride, having used it on many occasions. I have also combined this treatment with subcutaneous injections of trypan-blue. I have noticed the trembling symptoms mentioned by the essayist as sometimes following the tartar emetic injections, so conclude the tartar emetic is not wholly responsible for them.

Mr. Gibbings : I have no experience of the effect of adrenalin chloride in this disease nor can I see what good it can be expected to do. The objection to the use of trypan-blue is the great discoloration of the tissues which persists for a very long time, long enough to be a drawback when the animal is fattened off for the butcher. One of the reasons why tartar emetic was suggested for the treatment of this disease was the effect it had been found to have on the parasite during investigations by Stockman and others in South Africa.

Mr. J. Dunstan : I have nothing to add to the discussion. I have tried the new treatment, but have gone back to the old one as I get just as good results from it.

Mr. Gibbings : That is rather an off-hand statement, to which I am afraid I cannot attach much importance, unless it can be backed up with some statistics.

Mr. Bloye : Following the salts treatment I have found turpentine and iron very useful. I think the diarrhœa noticed at the onset of the disease is generally only the forerunner of constipation, which passes away as the disease improves, without any drastic treatment in the form of purgatives.

Mr. Gibbings : I have given up the use of turpentine, as I have found it, or at least I have thought it tended to, cause nausea. I quite agree with Mr. Bloye that the initial diarrhœa is spurious, and is soon succeeded by constipation, to which I do not attach much importance, especially if the urine improves in colour.

Mr. Masson : I should like to ask Mr. Harvey if he recommends Lang's method of administering medicine in red-water, *i.e.*, does he pass the tube through the nostril ? (*Mr. Harvey :* By the mouth.) I have found, like other speakers, that there are two types of the disease. In one district it is much more severe than in another, and it is probable that the difference is caused by the different piroplasms which have been referred to by Mr. Harvey. I used to give salts first and follow with turpentine and iron 12 hours after. I now prefer to use lard and salt only, as it seems to prevent constipation. I have not heard any reference to the fact that horses will contract the disease in red-water districts. I have recently had two such cases on a red-water farm. Both recovered with the same treatment as used for cattle.

Mr. Gibbings : Mr. Masson's experience as to the disease varying in his district bears out what has been said and indicates that the parasite (as suggested by Mr. Harvey) varies. I have also had typical red-water cases in horses, and have treated them successfully with tartar emetic injections as in cattle. The tube is a very good method of administering medicines and liquid nourishment, but I prefer to drench in the ordinary way for the sake of the thirst-inducing action on the mucous membranes of the pharynx, to which reference has already been made. With regard to the condition of tissues, they are usually moist. I have not had much opportunity to make *post-*

mortem examinations, but I have noticed in those which have been slaughtered the flesh is moist and does not set readily. I believe the diminution is infinitesimal; and I fail to see how any diminution can take place.

The President: I agree with Mr. Harvey. In azoturia the psoas muscles are very dry, but, of course, the two diseases are quite different.

Mr. W. T. Dunstan: I can add nothing to the discussion. I stick to the old treatment and get good enough results.

Mr. W. P. Stableforth: I meet with a large number of red-water cases chiefly in May, June and July, but the season of the year when cases arise varies very considerably, for I have attended cases even in December, but they are usually of a very mild type.

When a stockowner changes farms, removing his cattle from non-infected ground to a farm that harbours the red-water tick, he usually meets with trouble in that the majority of his cattle become infected with a very virulent type of piroplasmosis, and, failing skilled treatment and careful nursing, he will lose a large percentage of his stock, due in my opinion not so much to auto-intoxication (as suggested by Mr. Harvey) as to the very great destruction of red corpuscles, and the debility and depression caused by such loss of oxygen carriers.

With regard to the treatment of red-water, I have very little to add to the discussion that is new. I prefer animal fats and sodium chloride in the early diarrhœa or piping stage. I firmly believe that far too large doses of mag. sulph. and soda are usually given, which, in my opinion, cause muco-enteritis or paralysis of the intestinal tract.

I also prescribe stimulants, tonics and nourishment in the form of eggs, milk gruels—particularly linseed. A very useful tonic is Easton's Syrup (quinine, iron and strychnine). I have also found fairly large doses of ol. terebinth beneficial when the urine fails to clear.

It is also a good plan to treat the patient in the open as much as possible. By this I mean at grass the animal is more contented among its fellows and the appetite is much longer maintained. The patient should also have access to a plentiful supply of water. When treatment has not been commenced at an early stage, and debility is pronounced, the patient must have quietude, warmth and very careful nursing. Have known many patients suddenly collapse when unduly excited at this stage.

I have felt for some time that we require a more modern form of treatment, at least one that is in advance of that adopted by the owner. When the veterinary practitioner is called in it is usually to a case of a serious nature, and one which has already been treated freely with salines, especially mag. sulph. *ad lib.*

It is my intention to give the intravenous injection method an extensive trial, and I hope other members of the Association, who have not already adopted the treatment, will do likewise, and report results on some future occasion.

I greatly appreciate the paper, for it is one that will appeal to many general practitioners, and will be read with interest. It will ventilate a new line of treatment which should have far-reaching benefits to stockowners in the red-water districts of the country.

PROPHYLACTIC MEASURES.

Mr. Gibbings: This is a very important matter, and one on which I should like suggestions. I have tried paraffin washes 25 per cent.; this is fatal to ticks, but the effects only last three or four days. In South America they use the swim bath periodically with success, but this is not practicable here.

Mr. Harvey: In Queensland they use the swim dip once a week, but I agree with Mr. Gibbings that this is not practicable in this country.

Mr. Edwards: Sir Stewart Stockman has an experimental station for producing material for protective inoculation, the basis of the material being red-water blood. With regard to a simpler method for intravenous injections, in South Africa I saw it repeatedly done in a very rough and ready way for rinderpest. The receptacle was only an ordinary whiskey bottle, and the salted blood was obtained by the use of a small trocar and canula, being run into a citrate of potash solution, with which it was thoroughly mixed.

Mr. J. Dunstan: I have tried Sir Stewart Stockman's prepared blood in one case on some animals being exported, and it was successful.

Mr. Gibbings: Stockman advises housing for a period after protective inoculation. This is a great drawback to its general application, and sometimes, I am told, the results are unfavourable. If transfusion is practised and the blood should happen to be from a susceptible animal, it may do harm. I have tried intravenous injection of normal saline solution, but it has not answered. Then, endeavouring to clear the pastures by keeping sheep only on the infected ones is useful if the sheep are dipped frequently. I have also seen pastures treated with heavy dressings of lime and salt without any success. On one farm in this district the rough grass was burned, and that certainly did reduce the number of cases. I think pasturing with pigs and horses might be useful, but I have no experience of it.

Mr. Gibbings then gave a practical demonstration of the method he and Mr. Fraser adopted for intravenous injection of a solution of tartar emetic.

Abstracts and Reviews.

Wheat Culture-Media.

Since Pasteur and Koch suggested the use of malt extract for culture-media, many bacteriologists have made a trial of the same, but this has not been successful and malt extract has not come into general use. My own studies of the employment of grain extracts cover a period of nearly ten years. Wheat is not only much cheaper than meat, but it is more convenient to get and to carry about. It is necessary, too, to keep in mind the sporadic influence of pathogenic bacteria and to prepare both vaccine and immune serum, if possible, at the place where the epidemic broke out and from the actual strain of bacteria which caused the epidemic at that locality. For this purpose the first requisite is to get suitable culture-media. In some places it is difficult to get meat or its extract, though it is easy to preserve them, while wheat can readily be obtained almost everywhere and as readily preserved. My experimental results show that there is no more value in meat-extract culture-media than in wheat-extract culture-media.

Method of Making Wheat-Media.

1. *Wheat broth.*—A. Roast the wheat (with or without husk) in an iron pan until it becomes brown. B. Put 1lb. of the roasted wheat without washing into 1600c.cm. of distilled water. C. Boil this in Koch's boiler for half an hour. D. Strain through a clean cloth. E. Make up to 1000 c.cm. with distilled water if under this quantity. F. Add 0·5 g. of taka-diastase or ordinary diastase and shake the flask well. The temperature of the contents at this time should be maintained at 30° to 40°C. for half an hour. G. Filtration. The resultant fluid ought to be quite transparent with yellowish colour, almost the same as ordinary meat broth. The fluid has a sweet smell, the reaction being slightly alkaline. H. As we make usual broth, add 5 g. of sodium chloride and 10 g. of peptone albumin, then boil and filter.

2. *Wheat agar.*—Add 15 g. (in winter) or 20 g. (in summer) of agar to the above quantity. For the rest the preparation is almost the same as that of meat agar as usually prepared. Many special culture-media can be made of the wheat broth and agar media.

Cultural and Agglutination Tests.

To compare the rate of bacterial growth on the various media I used *Staphylococci albus* and *aureus*, B. *coli*,

B. *typhosus*, B. *dysenteriæ*, *Vibr. choleræ*, and others, and found almost the same growth in each case on the different media.

The difference of agglutination reaction of the bacteria cultivated on two different culture-media was then tested

Staphylococcus.			*B. coli.*		
Dilution of serum.	Cultured on		Dilution of serum.	Cultured on	
	Wheat agar.	Meat agar.		Wheat agar.	Meat agar.
10	+	+	25	+	+
50	+	+	50	+	+
100	+	+	100	+	+
200	+	+	200	+	+
300	− −	−	400	+	+
			600	−	−

Agglutination positive, + ; negative, −.

For therapeutic purposes I have made autogenous vaccines from cultures of the above-mentioned bacteria on wheat-media and observed good results.

Summary.

The experimental results given prove that wheat can be used instead of meat for culture-media. As the wheat-extract culture-media contains maltose, they can be used as special media for particular bacteria and for diagnostic purposes.

[Otabe, S., *Lancet*, 1919, September.]

Clinical and Case Reports.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases.

Diagnosis and Treatment of Diseases of the Digestive System in Cows.

By E. McSwiney, M.R.C.V.S., Cork.

The review of Udall's investigations, in your issue of the 5th inst., is a valuable contribution to the study of a colossal subject.

The problem of diagnosis presents the greatest difficulty. Undoubtedly, acute diffuse peritonitis, and what Udall terms "acute primary indigestion," can be confused, but I fail to see how the error can be easily made.

"The most frequent acute disease of the digestive system is an atony of the fore-stomachs induced by an overloading of the rumen and reticulum with food or indigestible substances." I agree, but I use the words "partial overloading," for, excluding absolute engorgement, it is difficult to tell at what stage overloading occurs. Milch cows showing symptoms of loss of appetite, slight grunt, loss of milk, scant passage of fæces, but without undue fulness of the left flank, save a little tympany, have been quickly relieved by the removal of as little as a quart or two of the contents of the rumen. Improvement was noticeable in a few minutes after they had vomited that small amount. Was the disease one of overloading, or partial overloading and atony, or atony alone?

As "the last straw breaks the camel's back," the last pound or two of food on reaching the rumen might well interfere with its normal movements—to be followed by atony involving one or more stomachs.

I believe that that is the usual condition; and treatment ought to be first directed to the removal of some of the ingesta by vomition, and not, as Udall advises, by laxatives and stimulants.

The really bad case responds more promptly to the act of vomition than to the exhibition of laxatives and stimulants. It responds in a few minutes. I have followed with success that line of treatment for some years.

Stimulants are valuable and so are laxatives, if vomition cannot be excited, but, in my experience, those are not the most serious cases. Besides, one must remember that recovery sometimes follows the withholding of food *and medicine* for a period of forty-eight hours.

To Excite Vomition.

An ordinary probang is passed into the rumen, or as far as it can go—it frequently fails to enter the stomach; then the cow's head is lowered; at the same time the probang is withdrawn by about one-half of its length; after a few seconds it is again pushed towards the stomach and immediately withdrawn. This alternate insertion and partial withdrawal, while the head is lowered, is often followed in a minute or two by vomition of a quart or more of solid and liquid ingesta. I have removed as much as half a bucketful of ingesta in the space of ten minutes. On the other hand, I have often failed to remove as little as a quart.

In conclusion I venture to say that in those serious cases, for which Udall advises rumenotomy, one ought to first try what can often be accomplished by the use of the probang.

Milk Fever and Meningitis.

By G. Elmes, F.R.C.V.S. (St. Albans).

Having read with interest Mr. Matthew's paper on some aspects of milk fever, presented to the North Wales V.M.A., and the following discussion, I venture to pen the following, which, I believe, will be open to great discussion and difference of opinion.

After calving, for three days there is great liability to milk fever, but I think there is another disease that appears about that time which is often confounded with milk fever, I speak of cerebro-spinal meningitis. Milk fever one approaches with such gaiety of heart that when one gets a death it is a great blow and it is well to be able to prognosticate fatal termination when first called in.

Symptoms.—I. Cerebro-spinal meningitis.—The chief symptoms are, in my belief, high temperature, impossible to keep animal on sternum, contracted pupil, breathing very quick—then breath held for a few seconds, when the quick breathing commences again—body is reeking with perspiration, and if the

cow is given a slap on the ribs she has a paroxyism. Every case that I have been able to diagnose has proved fatal.

Before the case is too advanced and with the animal on sternum, the head is fixed to sides and it is almost impossible to pull head out in line with body, eyes staring and oscillating, pulse most difficult to ascertain.

II. Milk Fever.—In milk fever the pupil is dilated, and there is preliminary twitching of eyelids, temperature normal or sub-normal, animal can be placed on sternum and kept there with suitable packing, the head can be put in line with body and propped up; the breathing is quiet and regular, pulse soft and weak.

As a small matter of interest I have not definitely been able to determine which is the first symptom of milk fever, the twitching of the eyelids or the contraction of the rectus femoris muscles which are hard and knotted and felt just above the patella. It is the great difference in the result of treatment with udder inflation that first led me to think these were two distinct diseases.

I do not think these cases of cerebro-spinal meningitis are tubercular in origin as I have only seen tubercular meningitis in quite young animals and then it has been the portion of the meninges at base of brain that has had the tubercles in it, whereas in cerebro-spinal meningitis it is the cortical portion particularly affected.

In Wallis Hoare's System of Veterinary Medicine, p. 1239, is the following: Poulsen observed cases of meningitis which occurred one or two days after calving and were said to be differentiated from milk fever by the presence of fever, contracted pupils, and in some cases by general convulsions."

I cannot say that up to the present I have seen or (perhaps better) been able to recognise a case of parturient eclampsia in the cow, although I have seen several in bitches.

Twice lately I have observed a peculiar nervous condition in recently calved cows, in which they have appeared strange and dazed, continually licking with their tongues and biting at the litter—getting this in a great bundle in the mouth, but unable to chew it. This condition quickly passed off, and the cows did not go down.

My excuse for writing is that I am unable to attend these most instructive meetings of our societies, and learn much from the discussions.

Association Reports.

The Southern Branch of the National Veterinary Medical Association.

Discussion on "Bovine Abortion and its Control."

(Concluded.)

Professor Edwards continuing his reply said:—Mr. Male had asked a series of important questions as to the disease, first of all, as to how many times a cow aborted. In the paper he had mentioned parenthetically that in this country at present it seemed to be that in the generality of cases cows aborted once; but that was a statement he was prepared to modify quite readily. Bang in his original paper stated that in his experience in Denmark cows aborted twice, three times, and up to five times. Such repeated abortions in this country appeared to be comparatively infrequent, and now it seemed to be the experience of many practitioners that a single abortion was common. Two abortions were also common, especially in older animals, but more than two were comparatively uncommon, although one knew of many cases in this country where cows had aborted three times, had had normal pregnancies, and had commenced to abort again. The reason why he had put the statement in parenthesis was just to show that in this country, at any rate, usually the virulence of the disease was not so intense as that observed by Bang, and that immunity was produced sooner.

According to Mr. Male's experience, vaccination should be carried on in the herd repeatedly for a number of years. That seemed to be a very rational procedure from what was known as to the nature of the disease, but it seemed that in many districts the application of the vaccine once to a herd was sufficient. In the paper he had mentioned some statistics which bore upon that point, namely, those obtained by the Oxfordshire Committee. After one vaccination only in a large number of animals half-a-dozen cases of abortion occurred. The following year only two occurred, but it seemed that in the great majority of cases one vaccination was sufficient. It was better, however, although it involved a little more trouble, to vaccinate twice. Mr. Male then contended that isolation was not a practicable procedure in most outbreaks, on account of the expense involved. That was true, when one considered the state which the outbreak had reached in most cases when veterinary attention was sought. If the owner could be convinced to adhere to the golden maxim that every case of abortion should be regarded as one of a contagious kind, then probably the disease could be got hold of and eradicated by isolation measures before those isolation measures had become too expensive.

Mr. Male had then asked whether there were any means of telling by the reaction whether an animal had been recently infected or whether it was recovering from the disease, or whether it was a cow which it was advisable to keep or whether it should be isolated. There were no means of telling by the agglutination test how long the disease had been in progress. If the reaction was positive, all one could say was that the animal was or had been infected; but there was good reason to think that when the reaction declined the bacilli were disappearing from the system. There were no means of telling by the agglutination test exactly at what stage of the infection the animal was. All one could say was that it was infected.

Then Mr. Male had mentioned a case where the animal had reacted both to the tuberculin and to the abortion test. In such circumstances it would be extremely difficult to eradicate both diseases simultaneously, especially if they were far advanced. There could be no doubt that Mr. Male had advised wisely when telling his client to get rid of the tuberculosis first.

Mr. Male was inclined to adopt vaccination as a routine measure in most of his cases, but he (Professor Edwards) might say there again that vaccination had its indications, as had also isolation. Isolation was indicated where the disease was detected early and where there were facilities for isolation. Otherwise on the ordinary farm, at the time when the disease was ordinarily reported, namely, when it had spread considerably, there was no other method of dealing with it except by vaccination, and if one had made up one's mind that isolation was impossible, then one should immediately resort to vaccination. There were of course the other instances where a dairy herd was comprised of cows which were being frequently purchased, and where there were no adequate means for isolation. There again in such herds which were being made up of purchased animals it was difficult to employ isolation measures. In the circumstances in which abortion was now reported to veterinary surgeons in nine herds out of ten one had to resort to vaccination.

A question had been asked as to whether the agglutination test furnished any information as to which were the dangerous animals. There he might answer a question which Professor Wooldridge had put to him later in the discussion, namely, the question of purchasing animals with a warranty. The agglutination test would tell whether the animal was infected, and it would tell something more. It did in other diseases, such as typhoid or diseases in which anti-bodies were formed and remained in the blood for a long period afterwards. It seemed that, in the case of abortion, when the bacillus disappeared from the system the agglutination reaction disappeared very shortly afterwards. That had been borne out by numerous investigations. Therefore if an animal reacted the great probability was that it was harbouring live bacilli in its system. Whether those live bacilli were the outcome of natural infection or artificial inoculation did not matter. They were still present in a living state in the system, and the cow was capable of voiding them in an infective condition.

Mr. Male's experience was that abscesses formed in cows that had aborted when they were inoculated.

Mr. MALE said the point he wished to make was that some cows aborted after vaccination, and in those cases very often an abscess was present.

Professor EDWARDS said that was in fact one of the oldest observations in connection with abortion. In Bang's original experiments, before ever inoculation with the living bacilli was attempted on a practical scale, he found that all his animals were effectively vaccinated except one, which developed an abscess as the result of being inoculated with the living bacilli. That animal subsequently aborted. So that a concomitant invasion with other organisms appeared to nullify the vaccinating effects of the injection with the living bacilli. It would be very interesting to study the reports of the Berkshire Committee when they appeared. The great difficulty in the past had been the collating of statistics with regard to the disease.

Mr. Broad touched upon a most important proposition which had been particularly brought to his (Professor Edwards') notice by Professor Craig during the Irish meeting. It was a most practical suggestion for the building up of a clean herd without resorting to laboratory tests, namely, by buying in young animals, having in mind the assumption that young animals were relatively immune. That was indeed a most practical suggestion, and it would be interesting to find out whether, if dairy herds and the like were made up of animals purchased when they were young, instead of when they had attained maturity, abortion disease could be kept out.

Professor WOOLDRIDGE said that recently when in Cheshire a very well-known veterinary surgeon in dairy practice had informed him that for years past they had been accustomed to turn out aborted cows with the young stock, and that they had noted particularly that, even in those instances where they had not been directly vaccinated, the incidence of abortion amongst those was very markedly reduced.

Professor EDWARDS said that it was a most interesting point, and one which in future years would no doubt have to be followed up closely, namely, how far one could take steps to deal with the disease, having in mind the relative immunity of the young.

With regard to Mr. Hogben's question, that was the only instance at the present meeting in which the question of sterility had come forward prominently. At other meetings which he had attended the question of sterility had been brought very much to the fore. Was there any connection between sterility in cattle and contagious abortion? That was a most difficult question to answer, because in a good many herds sterility and abortion appeared concurrently. Another unfortunate incident frequently happened. In herds that were vaccinated sterility appeared, and the sterility was put down to vaccination. Was there any connection between the sterility and contagious abortion from the vaccination? On *à priori* grounds one had to give the answer in a decided negative. The bacillus of contagious abortion did not establish itself in the genital tract. It was only when the womb became pregnant that the bacilli would establish themselves, and the sterility might be the result of an endometritis following on the act of abortion. But that was due to a secondary organism which might as well complicate any other infection. Did sterility follow on the vaccination itself? One speaker in Scotland last week had told him that he was at one time rather inclined to believe that that was the case, because in some herds the vaccinated cows had become sterile. However, on collecting statistics he had found that such instances did not amount to more than about two or three herds out

of twenty. It was unfortunate that in some districts and in some practices sterility should appear in herds after vaccination. It appeared to be merely a coincidence. The common cause of outbreaks of sterility in this country as well as in other countries had not yet been ascertained, but whatever it was, it did not appear to be directly connected with the abortion organism.

Mr. HOGBEN asked if Professor Edwards would advise re-vaccination of the animals in those cases.

Professor EDWARDS said he would not. There would be no point in re-vaccinating the cows so early.

Mr. MALE said he had had numerous cases of sterile cows which, after being vaccinated, became pregnant.

Professor EDWARDS said that that was a very important announcement, and it showed the advantage of discussing the question at meetings all over the country.

As to the question of inoculation with dead or living cultures, inoculation with dead vaccine did not confer anything more than a very temporary immunity.

As to whether he considered much risk attached to the spilling of a drop or two of the vaccine on premises in which the vaccination was being carried out, he would say that there was not any risk.

Mr. Little thought that the virulence of the organism was now dying out, but it would be probably a little rash to say that on the whole abortion was dying out in virulence. From time to time waves of infection seemed to pass through certain districts.

As to the vaccination of young heifers, it was the experience of a good many practitioners that young heifers could be vaccinated with impunity.

He had been asked the question: How long should one wait before one attempted vaccination after the act of abortion? Should one wait a month? Not necessarily. One could vaccinate as soon as one liked, because when the animal had got rid of its uterine contents, then there was nothing in the uterus for it to live upon. One could vaccinate as soon as one liked after parturition.

In passing, he might mention that in order to eradicate the disease completely, it would be necessary to apply the agglutination test to every herd throughout the country and to apply quarantine regulations, and in the very nature of things such work could not be carried out.

Mr. Little had said that he failed to see how the Order could be carried out, as nobody could say whether or not a cow had aborted. One could tell whether an animal was voiding dangerous material from its genital tract, but it would mean the injection of a series of guinea-pigs and a wait of two months for the result. However, if it came to a case of litigation such tests could be carried out. In his (Professor Edwards') opinion there were means available for bringing dishonest farmers to book; for instance, a man's neighbours would give information on the matter. With reference to the question as to whether an animal which had aborted should be vaccinated again on *à priori* grounds there seemed to be no reason to vaccinate an animal which had already aborted; it was already infected. As to whether there was any connection between mastitis and abortion, he would answer in the negative. There was no such connection.

Professor Hobday had asked whether he had had any experience of the disease in dogs. He had heard of outbreaks of contagious abortion in dogs, but they appeared to have been due to some quite different cause. He did not think anybody had yet satisfactorily elicited the cause of enzootic abortion in bitches, but whatever it was, it was most probably quite unconnected with contagious abortion in cattle. The agglutination test had not been applied to those cases on any extensive scale.

He had been asked whether one was justified in considering the disease as contagious to other animals and to the human being. As a matter of fact, it was quite possible for the disease to be transmitted to other animals. Experimentally one could succeed in transmitting it to any other animal, and it would cause abortion. So far there had been no authentic case of abortion in the human subject due to infection, or as the result of ingesting infected products. He had been asked the following question: If calves could be infected and they speedily threw off the infection, could one take serum from them and apply it to immunising other animals? He would reply that even if their serum was of much use, he did not think it would be employed on an extensive scale. He did not think that the serum would be so potent that it could be employed in convenient doses for immunising adults.

Mr. Willett was of opinion that the only way to control the disease was by making it a notifiable disease. Eventually the disease would have to be made notifiable, but he doubted whether any State measure would bring it under proper control. In America they had made it a notifiable disease, but they had had to withdraw their measures because they had been found to be utterly impracticable. The disease was far too widespread to be dealt with by such measures.

As to the question: How long did immunity last after vaccination? the reply was: As long as the animal carried bacilli. It might vary from a few months to years, and even while the animal was carrying the bacilli the immunity might not be sufficiently powerful to prevent abortion. Hence the reason for repeated vaccinations. After vaccination it would be difficult to state how long the effects lasted. Usually it was sufficient to tide the animals over one pregnancy. The question of the duration of immunity in contagious abortion had not been settled, and in any case it appeared to be a most variable one.

Professor WOOLDRIDGE asked if only a reacting animal was an immune animal.

Professor EDWARDS replied that that was largely but not entirely the case, because the natural immunity of the calf had to be contended with.

An informal discussion then took place between Professor Wooldridge and Professor Edwards on this

point, during which Professor Edwards made the following remarks :—

The object of the two months' interval was not to give the animal time to eliminate the bacilli. The bacilli were not eliminated after the two months ; they still remained in the system, and might remain in it for three years or more afterwards, as had been proved by laboratory observations. After vaccination the animal was a carrier for an indefinite period. The object of the two months' period was not to give an opportunity to the animal to rid itself of infection. The object of the two months' interval was to give the animal time to establish an immunity against the invasion of the bacillus into the uterus. The animal which was vaccinated became infected, and the organisms would be themselves in the mammary tissue, and there they remained, and anti-bodies were produced in the blood sufficient, while the organisms were there, to protect it against natural infection.

Two great things had been discovered about the disease : first, an accurate method of diagnosis, and, secondly, the carrier question. It appeared that immunity in the adult was perhaps only set up while the animal was still a carrier ; but when animals had been vaccinated then there was created broadcast a set of carriers, and those carriers were immune against natural infection ; but they were a source of danger to healthy animals.

Professor WOOLDRIDGE said that that would confirm the isolation method as against the vaccination method if one desired to eliminate the disease entirely.

Professor EDWARDS said that was so, and that was why he had insisted on isolation. At best, vaccination suppressed the disease by continually keeping it alive.

A hearty vote of thanks was accorded to Professor Edwards for his paper, and the meeting then terminated.

A farewell dinner took place the same evening at the Holborn Restaurant, where many of Professor Edwards' friends and colleagues gave him a very cordial send-off.

Lieut.-Col. Dunlop Young occupied the chair, and the proceedings were marked by the greatest enthusiasm. The function was fully reported in a recent issue.

Notes and News

The First World's Poultry Congress.

The first World's Poultry Congress was held at The Hague, Holland, September 5th to 15th, 1921, Queen Wilhelmina and the Prince Consort opening the Congress. The work was divided into two parts, viz., that of papers, and that of an exhibition.

Of interest to veterinarians was the exhibition, which comprised a collection of pathological specimens of fowls, nicely mounted and staged by the State Serum Institute of Rotterdam, including specimens of tuberculosis, roup, diphtheric enteritis, parasites, etc. The other section on disease was by the Poultry Pathology Research Laboratory of the North Carolina Experiment Station and included enlarged photographs, photomicrographs and prepared specimens of tumors of fowls and blackhead of turkeys, etc.

The programme of papers was divided into sections, the third being that of Hygiene and Disease, which was presided over by Dr. D. A. De Jong, of the State University of Leyden. Twelve papers were presented in this section by veterinarians who have specialized in diseases of poultry. Among the contributors were Prof. Dr. J. Poels, Professor Dechambre, Dr. D. A. De Jong, Dr. B. F. Kaupp, Prof. Dr. L. Le Blieck, Dr. J. R. Beach, Dr. F. Van Heelsbergen, Dr. B. J. C. Te Hennepe, Dr. H. Van Straaten, Dr. H. E. Reeser, Dr. L. F. Rettger and Prof. Dr. Camillo Terni.

Among the resolutions passed two are of especial interest to the veterinarian :

(1) In all countries where poultry production is an important industry, that adequate courses be provided in the teaching of poultry diseases in all veterinary and agricultural colleges.

(2) In all countries where poultry production is an important industry, that investigation of diseases of poultry be continued and a study of the advisability of official control of outbreaks of contagious and infectious diseases among poultry be made, and in the event of the advisability of such control, to determine which of the contagious diseases should be so controlled.

One of the excursion trips was to Rotterdam to visit the State Serum Institute. This institute conducts studies of diseases of the domestic animals of Holland, including poultry. It also maintains a laboratory for the examination of milk and water. It produces the sera and vaccines used in Holland for both prophylactic and curative measures in combating diseases of livestock and poultry. In this part of the institution there are kept 150 horses, 60 cattle and 200 hogs. The sera used on cattle are made from hyperimmunized cattle. It was found that some cattle suffered " serum disease " when sera from horses were used. The sera used in combating diseases of poultry included one for fowl cholera and one for fowl typhoid.

B. F. KAUPP, *Jnl. Am. Vet. Assn.*

AN ANTHRAX OBJECT LESSON.

Some interesting facts with regard to the spread of anthrax, and the necessity of meat being passed by a veterinary officer before being supplied for human consumption, are contained in the quarterly report of the Chief Veterinary Officer for Cumberland (Mr. J. Scott Bowden). Mr. Bowden refers to a case in the parish of Ennerdale, causing the death of a bull, two dogs, and nearly the farmer himself, only the immediate diagnosis of his medical practitioner saving his life. Mr. Bowden says :—

"I visited the farm, and was informed a bull had been taken suddenly ill some days previously, and the owner, wishing to save the carcase, cut its throat, took it into the barn, and dressed it. He had a slight scratch on his arm at the time. The offal was given to the dogs, two of which (one a foxhound), died, and another was very ill, but recovered. The carcase of the bull went to a local butcher, the hide and bones being later disposed of to dealers. As a result of police enquiries, the hide was traced to a tannery in Lancashire. The local veterinary inspector for Lancashire inspected it, and certified anthrax. The farmer's blood also contained anthrax bacilli. I have lately seen the farmer in question looking quite well, but firmly resolved never again to attempt the salving of a carcase of an ailing beast. Would that this man's narrow shave for his life could be a lesson to all stock-owners, not to risk their own, and their fellow-men's lives, by killing an ailing beast to save the carcase, regardless of what disease it is suffering from at the time, and who is going to eat it afterwards. It is one more case that proves there should not be an outlet for such carcases, and that only such meat as is killed in a public slaughterhouse, and passed by a veterinary surgeon as fit for human consumption, should be allowed to be sold to the public. So long as you have private slaughter-houses all over the country, the inspection of meat cannot be carried out, and tubercular carcases of meat will also find their way to the consumer."

Disease in Geese from Poland.

Some thousands of geese have recently arrived in this country from Poland and are being fattened on farms in several counties. The Ministry of Agriculture states that cases of a disease which appears to be fowl cholera have broken out in certain batches of these geese. From present reports, the geese die after two or three days' illness, the symptoms being drooping wings, sunken eyes, rapid loss of condition, weak gait, and, sometimes, diarrhoea. The Ministry is making immediate enquiries into the matter with a view to a definite diagnosis of the disease and the discovery of all localities in which it exists.

Lt.-Col. A. W. Mason.

Military Funeral at Lawnswood.

A military funeral was accorded on November 16th to Lt.-Col. A. W. Mason, veterinary surgeon, of Leeds, who had a distinguished career in the war in connection with the army veterinary services. The body was removed from Lazencroft Farm, Crossgates, to Holy Trinity Church, Boar Lane, where the first part of the service was conducted by the Vicar (the Rev. E. H. Dykes), assisted by the Rev. E. P. Hobson. The coffin, covered with the Union Jack, was afterwards borne upon a gun carriage to Lawnswood Cemetery, where the final sentences were read by Mr. Hobson. Four trumpeters of the Leeds Royal Artillery sounded "The Last Post."

The chief mourners were Mrs. Mason (widow), Mrs. Wood (daughter), Mr. Robinson (stepson), Miss Hollis (sister-in-law), Mr. Edward Hollis (brother-in-law), Mr. T. Bailes (brother-in-law), Miss Warwick, and Mr. E. A. B. Wood (solicitor to the family). Among those present were Major D. McDonald (representing the A.D.V.S., Northern Command); Major R. M. Horsfield (representing the Leeds Artillery); Mr. S. Wharam (of the Council of the Royal College of Veterinary Surgeons, of which Col. Mason was an ex-president); Mr. J. McKenna (ex-president of the Royal College of Veterinary Surgeons); Mr. George Barber (president of the Yorkshire Veterinary Society, a position which Col. Mason formerly held); Col. James Yates; Capt. Frank Somers; Mr. C. T. Baddeley (Bentley's Yorkshire Breweries); Mr. J. W. Oldroyd (Lancashire and Yorkshire Railway); Col. H. G. Bowes (R.C.V.S.); Mr. H. Stephenson; Mr. F. Kassel; Mr. G. Whitehead (Batley); Mr. W. Wright; Mr. Wm. Crawford; Mr. Hamilton Turner; Mr. and Mrs. C. Lishman; Mr. H. Pollard (Wakefield); Mr. Joseph Appleyard; Mr. Arthur Sheard; Mr. G. Barton; Mr. A. Findlay; Mr. A. McCormick; and Mr. Ernest Child. Many wreaths were sent.—*Yorkshire Post.*

A movement is on foot to encourage horse racing in every State in the Union in order to insure the United States of improved breeds of thoroughbred horses and thus open to that country a horse market which will successfully compete with England and Ireland, which for 200 years have been the horse markets of the world.

Obituary.

Hurndall, John Sutcliffe, 2 Cornwall Gardens Stables, South Kensington, S.W.7. Graduated London, 27th March, 1882.

Birth.

Keir.—At London, on the 14th inst., to the wife of Capt. David Keir, M.C., M.R.C.V.S., a daughter.

Correspondence.

Letters to the Editors should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

Too Accommodating?

Sir,—I enclose circular letter from a well-known firm of druggists, which I received yesterday.

It might be worth remarking upon in the *Record*.—Yours truly, Harold S. Robinson, M.R.C.V.S.

Townfield, Keighley, *8th November*, 1921.

The following is the letter to which Mr. Robinson refers:—

Research Laboratories,
Higher Runcorn.

H. S. Robinson, Esq.,
Veterinary Surgeon, Eversley,
Maghull, near Liverpool.

Hospital for Dogs.

Dear Sir,—Distemper, a disease which is very prevalent just now, is highly infectious and can only be properly treated in hospital, where the dog can be isolated and carefully watched. Treatment to be successful must be instituted early.

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Dr. Adami's Appeal and the Unqualified Assistant.

Sir,—Like myself, the majority of the profession will have received Dr. Adami's letter. I think it is a bold stroke, and success will only be attained by his having the support of the whole of the profession. The point which struck me on reading the letter was :—" How interesting it would be to know the number of unqualified assistants employed by members of the profession." If a man wants an assistant, the practice ought to be such that he can afford to pay a qualified man. I think the excuse put up by those members who say that they prefer the unqualified assistant to the qualified assistant, on account of the former being the more practical, is a very poor one. Demand affects supply. If there were no demand, there would be no supply. Although I worked for many years in more than one practice as an unqualified assistant, I should on no account employ one. I have no desire to pursue this subject further through the press, but if any employer of an unqualified assistant will come and spend a week-end with me, I will argue it out.—JOSEPH P. RAILTON.

Builth Wells.

[Dr. Adami's letter will be found on page 936.—Ed.].

Army Veterinary Service.

LONDON GAZETTE.—,WAR OFFICE—REGULAR FORCES.

November 18th.—The following temporary Captains relinquish their commissions on completion of service :—J. H. Taylor, M.C., F.R.C.V.S. (September 22nd), and is granted the rank of Major ; and retain the rank of Captain : L. Barnard (September 1st) ; G. H. Butcher (September 12th) ; F. S. Clay, O.B.E. (October 13th) ; C. W. Makinson (October 5th) ; R. S. Pethick (August 23rd) ; J. B. Welham (August 24th).

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaughtered as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No	No.	No.	No.	No.	No.
Week ended 12th November, 1921	...	...	3	3	...	...	...	...	20	22	15	21	6
Corresponding Week in 1920	...	...	11	15	...	...	...	...	20	30	15	36	14
Corresponding Week in 1919	1	...	5	13	3	271	...	...	51	74	8	51	18
Corresponding Week in 1918	15	...	7	9	...	...	1	4	54*	82	11	30	6
Total for 46 weeks, 1921 ...	22	1	434	554	43	2958	11	41	1892	2871	463	1105	413
Corresponding period in 1920	30	...	374	449	78	10115	13	22	3301	54 4	371	1672	679
Corresponding period in 1919	147	5	197	263	69	2959	22	58	4413	8732	281	2069	956
Corresponding period in 1918	72	2	218	252	3	40	30	89	3843	172	285	1261	516

NOTE. The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND.										
Week ended 12th November, 1921	...	...	...	...	...	...	Outbreaks 1	6	4	5
Corresponding Week in 1920 ...	...	...	...	...	...	...	...	9	1	1
Corresponding Week in 1919 ...	...	...	...	...	...	...	...	9	...	...
Corresponding Week in 1918 ...	...	...	...	...	...	...	...	9	1	2
Total for 46 weeks, 1921	1	1	7	77	...	...	72	242	106	63
Corresponding period in 1920 ...	1	1	...	...	1	3	90	298	13	35
Corresponding period in 1919 ...	...	...	...	...	1	1	134	240	30	93
Corresponding period in 1918 ...	2	2	...	...	...	...	93	279	26	87

NOTE.—The figures for the current year are approximate only.

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